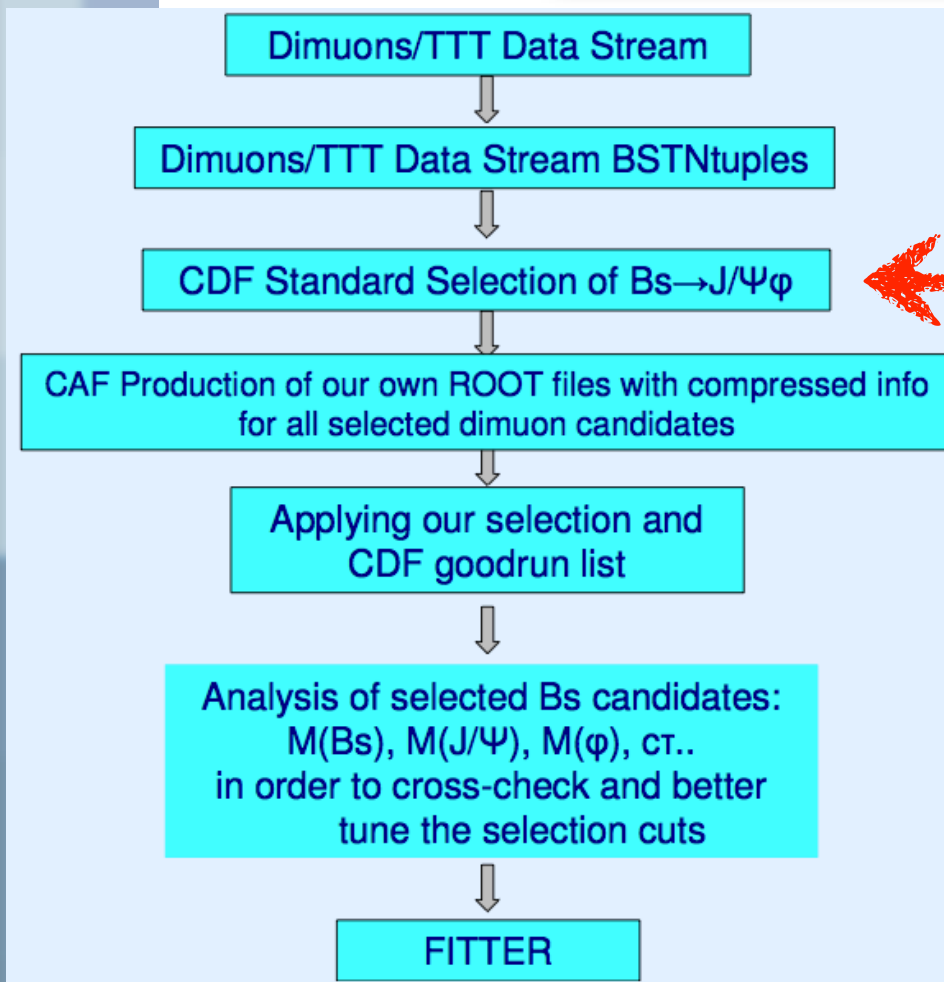


# **B-Standard NTuple in CDF Experiment**

2010.10.08

Korea-CDF Meeting  
Chonbuk National University

# Flow Diagram applied to both Dimuons and TTT



## CDF Standard selection:

B Prob.Min=0.001  
B Min Pt = 2.5GeV/c  
 $\Delta M(\varphi) = 0.01$   
Min(Track(Pt)) = 0.1  
B Max  $\chi^2 = 999$  (225)  
Min Pt( $\varphi$ ) = 0.5 (1) GeV/c  
 $\sigma$  (Lxy(B)) = 0.5 (0.1)  
Max Err(Lxy(B)) = 0.05 (0.04)

**(The cuts for the TTT are in parenthesis.)**

The selection follows into two stages; first stage corresponds to applying the so-called standard CDF pre-selection for both data streams,

The second selection stage refines the selection of Bs0 candidates on both data streams with slightly different cuts and still keeping rather loose requirements at this stage

# B-MonteCarlo Instruction

I. I just followed instruction page like below.

$B^0 \rightarrow D^- \pi^+ \rightarrow K^+ \pi^- \pi^-$  mode.

The job generate 10,000 events from 30 runs selected to be over a wide range of conditions/configurations. This decay mode is assumed to satisfy the two track trigger (TTT) and the output is run through the standard production.

## **Step I. Build the common executables**

- cdfSIM
- TRGSim++
- PruductionEXE

Installed mcProduction package version 6.1.4mc

## **Step2. Build a directory for accessing B-group specific infrastructure**

- The following instructions sets up the B-group directory structure which contains various infrastructure related files. These files include production spectra, particle properties, decay files, runlists and .tcl templates used to build a job.

## **Step3. Build the job directives for specific physics process**

makeplan.pl

Btcl/runlist\_testxftsvt mc517 (run file and sub directory)

Btcl/template\_BGenerator\_517.tcl (template file)

Btcl/trigsim\_newxftsvt.tcl (trigger sim template file)

2TT (selected trigger)

10000 (total number of events)

100 (run start)

1000 (number of events)

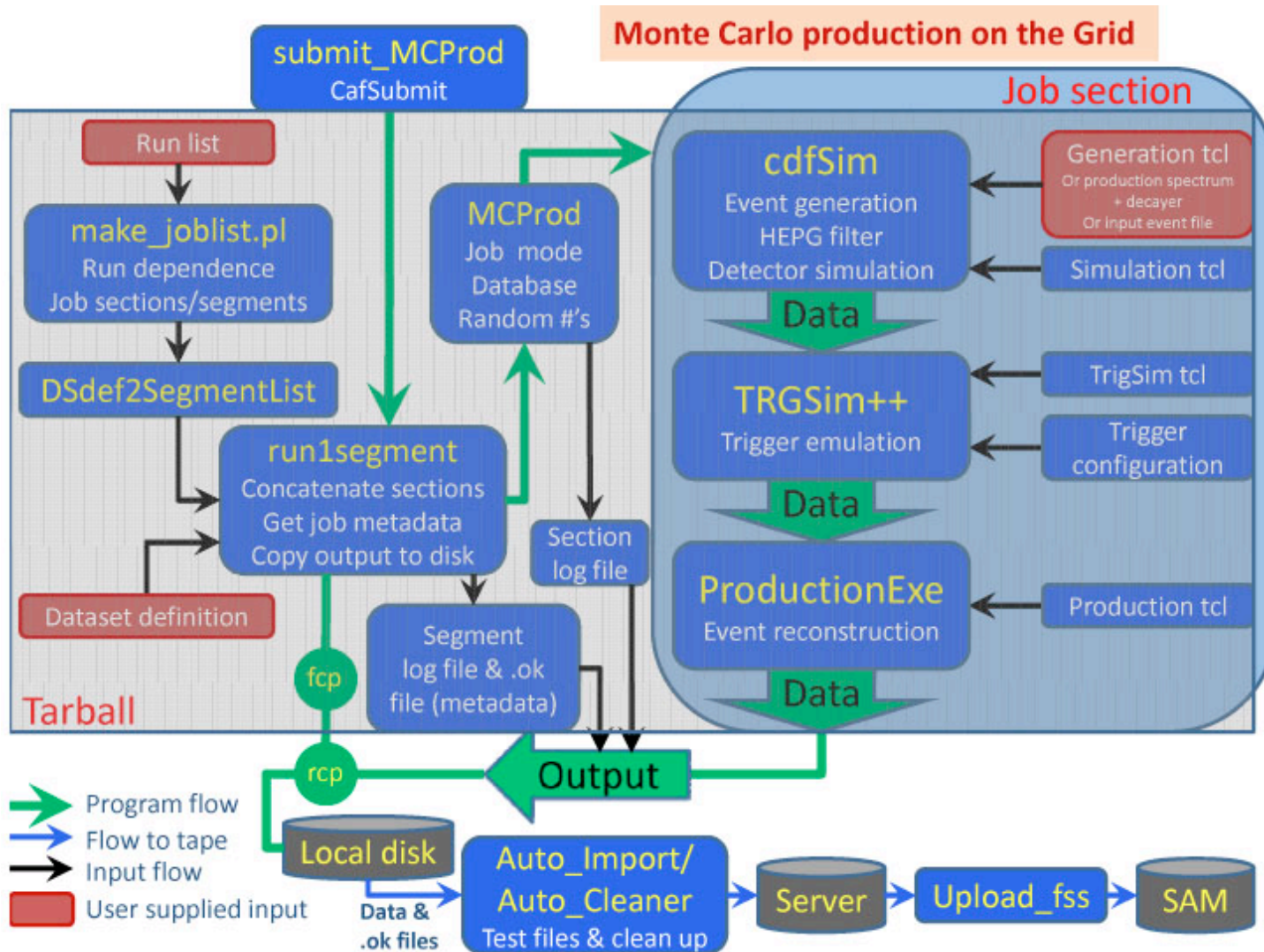
## **Step4. Create directories to receive output and submit the job**

-----  
When I using mc517 (B0\_Dm\_pip.DEC), it's OK.

I succeed all steps then I also got the \*.root file. (It's OK by locally and CAF)

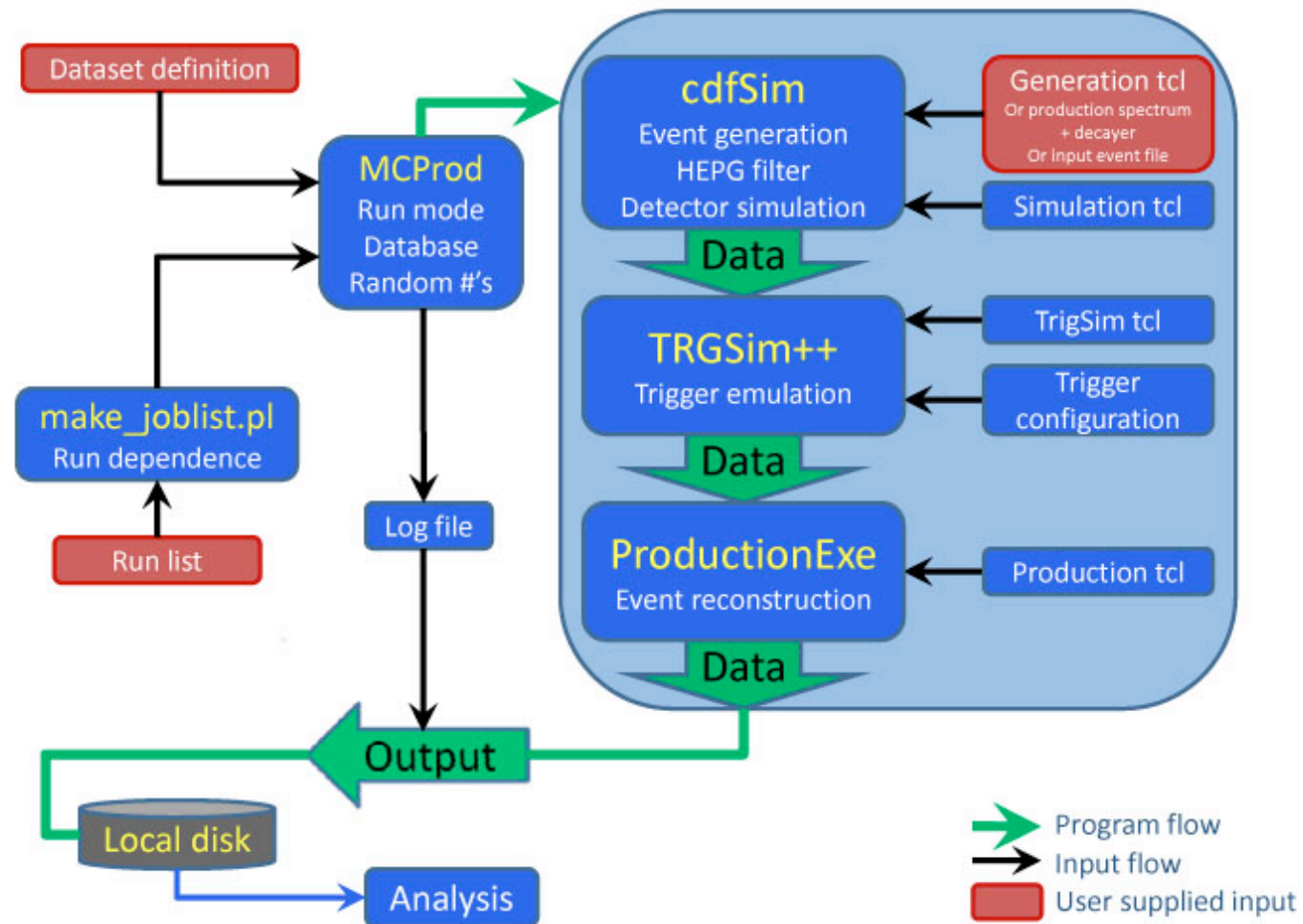
*Number of events Generated 436 Simulated 436 TrigSim 436 Produced 436*

# Monte Carlo production on the GRID



# Monte Carlo production on the local

## Monte Carlo production locally



# Create template file

2. To make a B\_s to J/Psi Phi events MonteCarlo.

## 1) Decay table (dbt/Bs\_JPsiPhi.DEC)

```
Alias myJ/psi J/psi  
Alias myphi phi
```

```
Decay B_s0  
1.000 myJ/psi myphi SVV_HELAMP 1.0 0.0 1.0 0.0 1.0 0.0;  
Enddecay
```

```
Decay myJ/psi  
1.000 mu+ mu- PHOTOS VLL;  
Enddecay
```

```
Decay myphi  
1.000 K+ K- VSS;  
Enddecay
```

```
End
```



## 2) Create template file (template\_BGenerator\_531.tcl)

compared with template\_BGenerator\_517.tcl file

```
# -bmeson=2 B0
```

```
# -bmeson=3 Bs
```

```
set BMeson 2 to 3
```

```
source mc_bgen_B0_2fb.tcl to mc_bgen_Bs_2fb.tcl
```

```
set userDecayFile B0_Dm_pip.DEC to Bs_JPsiPhi.DEC
```

```
CodePDG set 511 to set 531
```

Other condition is same.

-----

## 3) Checked result by locally and CAF

Bs\_JPsiPhi\_production.output, trigger\_Bs\_JPsiPhi.output,

Bs\_JPsiPhi\_261185\_1\_hist.root and log files.

*Number of events Generated 432 Simulated 432 TrigSim 432 Produced 432*

# Make B Standard NTuple

- Copy a BMC production output file
- Run the script:  
./myRunBStntuple.sh ./Bs\_JPsiPhi\_production.output Bs\_JPsiPhi\_production.root  
[ Note tcl has problem finding the input file in the current dir if ./ is not given. ]

That's it. The output file, Bs\_JPsiPhi\_production.root, contains the BstNtuple.

## 4. Check BstNTuple file.

- opened Bs\_JPsiPhi\_production.root file with root.  
Installed BstNTuple library and shared libs.

```
-----  
root [0]  
Attaching file Bs_JPsiPhi_103_Bst.root as _file0...  
Warning in <TClass::TClass>: no dictionary for class TStnHeaderBlock is available  
Warning in <TClass::TClass>: no dictionary for class TStnDataBlock is available  
Warning in <TClass::TClass>: no dictionary for class TStnTrigWdBlock is available  
Warning in <TClass::TClass>: no dictionary for class TTI2d is available  
Warning in <TClass::TClass>: no dictionary for class TTL2Decision is available  
Warning in <TClass::TClass>: no dictionary for class TTI3d is available  
Warning in <TClass::TClass>: no dictionary for class TBitset is available  
Warning in <TClass::TClass>: no dictionary for class TStnPrimaryVtxBlock is available  
Warning in <TClass::TClass>: no dictionary for class TStnLidBlock is available  
Warning in <TClass::TClass>: no dictionary for class TStnPythiaBlock is available  
Warning in <TClass::TClass>: no dictionary for class TGenpBlock is available  
Warning in <TClass::TClass>: no dictionary for class TStnArray1 is available  
Warning in <TClass::TClass>: no dictionary for class TObSPBlock is available  
Warning in <TClass::TClass>: no dictionary for class TStnTofBlock is available  
Warning in <TClass::TClass>: no dictionary for class TStnDeDxBLOCK is available  
Warning in <TClass::TClass>: no dictionary for class TStnStableBlock is available  
Warning in <TClass::TClass>: no dictionary for class TStnLinkBlock is available  
Warning in <TClass::TClass>: no dictionary for class TStnStableCovBlock is available  
Warning in <TClass::TClass>: no dictionary for class TStnDecayBlock is available  
Warning in <TClass::TClass>: no dictionary for class TStnDecayVtxBlock is available  
Warning in <TClass::TClass>: no dictionary for class TStnTagsBlock is available  
Warning in <TClass::TClass>: no dictionary for class TStnBJetBlock is available  
Warning in <TClass::TClass>: no dictionary for class TStnBeamPos is available  
Warning in <TClass::TClass>: no dictionary for class TStnLid is available  
Warning in <TClass::TClass>: no dictionary for class TStnDeDx is available  
Warning in <TClass::TClass>: no dictionary for class TStnStable is available  
Warning in <TClass::TClass>: no dictionary for class TStnStableCov is available  
Warning in <TClass::TClass>: no dictionary for class TStnPrimaryVtx is available  
Warning in <TClass::TClass>: no dictionary for class TStnTof is available  
Warning in <TClass::TClass>: no dictionary for class TStnDecay is available  
Warning in <TClass::TClass>: no dictionary for class TStnDecayVtx is available  
Warning in <TClass::TClass>: no dictionary for class TStnTags is available  
Warning in <TClass::TClass>: no dictionary for class TStnBJet is available  
-----
```

# Status for Off-site machine @ KISTI

## Fermilab CDF Linux machine Status

fcdfnx1 : SLF 5.3

fcdfnx2 : SLF 4.7 → SLF 5.3

fcdfnx3 : SLF 5.0

fcdfnx4 : SLF 3.0.9 → not available (?)

fcdfnx5 : SLF 5.3

Fermi-cdf machines were upgraded SLF Ver.4 to Ver5 last month.

## Off-Site machine at KISTI

cdfkisti.kisti.re.kr → stopped service

- all users old data back up

cdfkisti2.kisti.re.kr : SLF 5.5 (or SLF 5.3)

- new cdf off-site machine at KISTI
- Intel Xeon 2.4GHz / 4GB Ram / 250GB HDD
- File Server available for total 68TB (not only for CDF)